



The Dog Pen

Felix wanted to increase the size of his dog's pen. The current pen is in the shape of a rectangle and has a perimeter of 24 feet. If Felix doubles the perimeter of the pen, what could be the dimensions of the new rectangular pen? Justify your answer.



Unit 7 Lesson 2

Station Summary

Rectangle $ABCD$

Use the information provided by your group to complete the tables.

Scale Factor	AB (cm)	BC (cm)	CD (cm)	DA (cm)	Perimeter (cm)
1 (original)					

Scale Factor	$A'B'$ (cm)	$B'C'$ (cm)	$C'D'$ (cm)	$D'A'$ (cm)	Perimeter (cm)
$\frac{1}{6}$					
0.5					
2					
4					

What pattern do you see in the perimeters of the rectangles?

Triangle XYZ

Use the information provided by your group to complete the tables.

Scale Factor	XY (cm)	YZ (cm)	ZX (cm)	Perimeter (cm)
1 (original)				

Scale Factor	$X'Y'$ (cm)	$Y'Z'$ (cm)	$Z'X'$ (cm)	Perimeter (cm)
$\frac{1}{3}$				
0.5				
2				
4				

What pattern do you see in the perimeters of the triangles?

Station Summary

Quadrilateral *PQRS*

Use the information provided by your group to complete the tables.

Scale Factor	<i>PQ</i> (cm)	<i>QR</i> (cm)	<i>RS</i> (cm)	<i>SP</i> (cm)	Perimeter (cm)
1 (original)					

Scale Factor	<i>P'Q'</i> (cm)	<i>Q'R'</i> (cm)	<i>R'S'</i> (cm)	<i>S'P'</i> (cm)	Perimeter (cm)
$\frac{1}{3}$					
$\frac{1}{2}$					
1.5					
3					

What pattern do you see in the perimeters of the quadrilaterals?

Trapezoid *JKLM*

Use the information provided by your group to complete the table.

Scale Factor	<i>JK</i> (cm)	<i>KL</i> (cm)	<i>LM</i> (cm)	<i>MJ</i> (cm)	Perimeter (cm)
1 (original)					

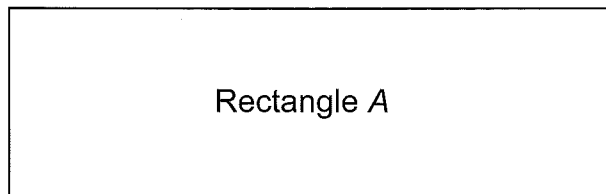
Scale Factor	<i>J'K'</i> (cm)	<i>K'L'</i> (cm)	<i>L'M'</i> (cm)	<i>M'J'</i> (cm)	Perimeter (cm)
$\frac{1}{3}$					
$\frac{1}{2}$					
1.5					
2					

What pattern do you see in the perimeters of the trapezoids?



Can You Draw It?

Rectangle A has a perimeter of 21 centimeters. Draw a similar rectangle whose perimeter will be twice the perimeter of rectangle A.



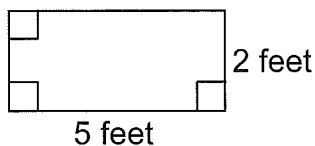


Independent Practice

If a scale factor is applied to a figure, the perimeter of the new figure will be affected by that scale factor.

Example:

Alesha's flower garden is shown below.

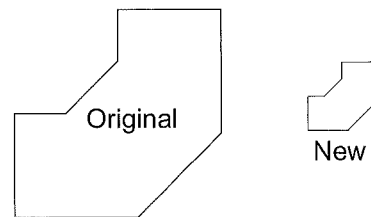


She increases the size of her garden by applying a scale factor of 3 to the dimensions. What will be the perimeter of the new garden?

Solution: The current garden has a perimeter of 14 feet. Multiply 14 by 3 to find the perimeter of the new garden. $14 \times 3 = 42$, so the perimeter of the new garden is 42 feet.

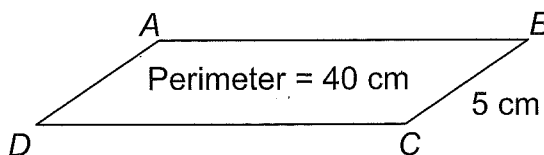
Example:

A toy company is creating a new size for one of their puzzles. The original puzzle piece shown below has a perimeter of 48 centimeters. The perimeter of the new puzzle piece will be $\frac{1}{3}$ the perimeter of the original puzzle piece. What will be the perimeter of the new puzzle piece?



Solution: $48 \times \frac{1}{3} = 16$. The perimeter of the new puzzle piece is 16 cm.

- Rectangle $ABCD$ has a perimeter of 36 centimeters. If the dimensions are doubled, what will be the perimeter of the new rectangle?
- If a scale factor of 0.8 is applied to the dimensions of parallelogram $ABCD$, what will be the length of $\overline{A'B'}$?

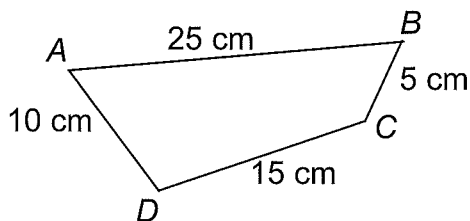




Unit 7 Lesson 2

- 3 Rectangle $ABCD$ has a width of 12 centimeters and a length of 24 centimeters. If a scale factor of $\frac{3}{4}$ is applied to each dimension, what will be the perimeter of the new rectangle?

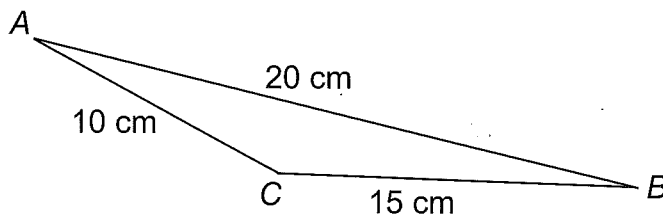
- 4 Demarcos drew the quadrilateral shown below.



If a scale factor of $\frac{1}{5}$ is applied to each dimension, what will be the perimeter of the new quadrilateral?

- 5 Rectangle $ABCD$ has a length of 12 centimeters and a perimeter of 36 centimeters. If a scale factor of $\frac{2}{3}$ is applied to the dimensions, what will be the width of the new rectangle?

- 6 Triangle ABC is shown below.

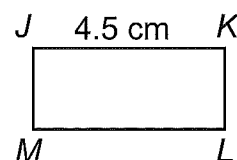
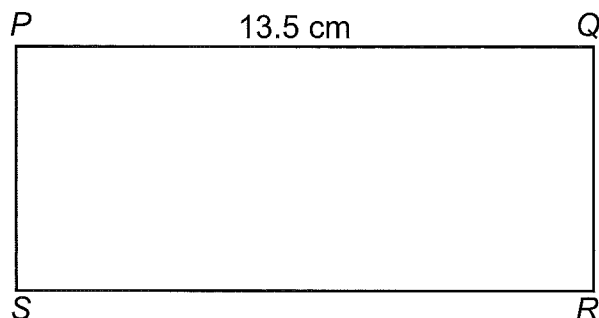


If a scale factor of 1.5 is applied to the dimensions, what will be the perimeter of the new triangle?



Ryan's Rectangles

Ryan drew the 2 similar rectangles shown below.



If the perimeter of rectangle $PQRS$ is 37.8 centimeters, what is the perimeter of rectangle $JKLM$? Justify your answer.

FOR TEACHER USE ONLY:

a. YES NO Student arrives at a correct solution?

	4	3	2	1
b. Conceptual Knowledge				
c. Procedural Knowledge				
d. Communication				



Unit 7 Lesson 2

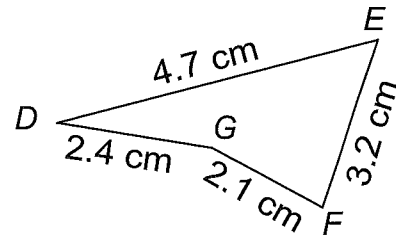
- 1 Rectangle $ABCD$ has a length of 15 centimeters and a perimeter of 44 centimeters. If a scale factor of 3 is applied to each dimension, what will be the width of the new rectangle?

A 21 cm
B 42 cm
C 45 cm
D 132 cm

- 2 A parallelogram has a perimeter of 24 inches. If a scale factor of 3 is applied to the base and height of the parallelogram, what will be the perimeter of the new parallelogram?

A 8 inches
B 24 inches
C 27 inches
D 72 inches

- 3 Quadrilateral $DEFG$ is shown below.



If a scale factor of $\frac{1}{4}$ is applied to each dimension, what will be the perimeter of the new quadrilateral?

A 0.25 cm
B 3.1 cm
C 12.4 cm
D 49.6 cm

- 4 A scale factor of 2 was applied to rectangle A to create a similar rectangle B . If the perimeter of rectangle B is 56 inches, what is the perimeter of rectangle A ?

A 112 inches
B 56 inches
C 28 inches
D 14 inches